

REMARKS

Further and favorable reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

Claims 1, 9 and 10 have been cancelled.

Claim 2 has been amended to delete the word “simple”, thus rendering moot the Examiner’s objection to claims 1 and 2. [As mentioned above, claim 1 has been cancelled.] Claim 2 has been further amended to change (c) to recite an alloy layer of copper and zinc. Claims 2, 12, 14, 16, 18 and 20 have been amended to recite proper Markush language, thus rendering moot the Examiner’s objection to claims 2, 10-14 and 16-20. Claims 3, 4, 5 and 7 have been amended to recite “less than” 100%, thus rendering moot the Examiner’s rejection of these claims under the second paragraph of 35 U.S.C. 112. Support for this language can be found in Tables 2, 7, 9, 10 and 13 on pages 15, 17, 18 and 19 of Applicants’ specification. Each of these Tables demonstrates that the relevant element (tin in claim 3, indium in claim 4, silver in claim 5 and zinc in claim 7) is present in an amount “less than 100%”. Furthermore, support is found in the language of the claim itself. As pointed out by the Examiner in the rejection, it would be impossible for an element to be present in an amount of 100% in an alloy, as an alloy must contain at least two elements. Therefore, the term “alloy” itself provides support for the phrase “less than 100%”. Claims 3-7 have been amended to positively recite limitations, using the term “wherein”, thus rendering moot the Examiner’s rejection of these claims under the second paragraph of 35 U.S.C. 112. Claims 11, 13, 15, 17 and 19 have been amended to recite “a surface” rather than “the surface” so as to avoid a problem with antecedent basis. Lastly, claims 11, 13, 15, 17 and 19 have been amended to make minor editorial changes.

New claims 21-30 have been added to the application. Support for these claims can be found in original claim 2. Specifically, (c)’ is the alloy of copper and tin, which was excluded from amended claim 2, and (h)’ is the alloy layer of tin and copper, which is a portion of (h) as recited in claim 2. Claims 22-30 correspond to claims 3, 6, 8, 11, 12, 13, 14, 19 and 20. Therefore, no new matter has been added to the application.

The rejection of claim 5 under the first paragraph of 35 U.S.C. 112 as failing to comply with the enablement requirement is obviated by the claim amendments.

The Examiner takes the position that the upper layer may contain 100% silver, however, it is unclear how Applicants could form an upper layer having the claimed silver content which additionally meets the hardness value of not more than 40 Hv as recited in claim 1. The Examiner relies on JP '355 as teaching that an upper layer containing silver has a hardness Hv of 108.

Initially, Applicants note that claim 5 refers to the amount of silver contained in the under layer, not the upper layer. Therefore, the relevant limitation of cancelled claim 1, which recited an Hv value of not less than 60, did not conflict with the language of claim 5. However, claim 1 has now been cancelled, and claim 5 is now solely dependent upon claim 2, therefore, the rejection has been obviated by the claim amendments.

The patentability of the present invention over the disclosures of the references relied upon by the Examiner in rejecting the claims will be apparent upon consideration of the following remarks.

The rejection of claims 1-3, 6, 8-14, 19 and 20 under 35 U.S.C. 102(b) as being anticipated by Tanaka et al.; as well as the rejection of claims 1-3, 6, 9-14, 19 and 20 under 35 U.S.C. 102(b) as being anticipated by JP '355 are respectfully traversed.

The Examiner takes the position that Tanaka et al. teach a bearing comprising an electrodeposited upper layer of tin film and an electrodeposited copper alloy under layer, where the electroplated under layer is subjected to diffusion to form a copper-tin intermetallic having a hardness of 520 Hv.

The Examiner further takes the position that JP '355 teaches a sliding member comprising an electrodeposited upper layer of tin or indium film and an electrodeposited copper-tin alloy under layer.

The electrodeposited film of Applicants' amended claim 2 (claim 1 has been cancelled) requires a specific material to form an under layer selected from the group consisting of:

- (a) a silver layer,
- (b) an alloy layer of silver and antimony,
- (c) an alloy layer of copper and zinc,
- (d) a ternary alloy layer of copper, tin and zinc,
- (e) a zinc layer, and

(f) an alloy layer of zinc and copper.

Therefore, an alloy layer of copper and tin as the under layer, as taught by Tanaka et al. and JP '355, does not teach or suggest the limitations of Applicants' amended claim 2.

Claims 3, 6, 8, 11-14, 19 and 20 all directly or indirectly depend on claim 2, and therefore are patentable over the references for the same reasons claim 2 is patentable over the references. [Claims 1, 9 and 10 have been cancelled.]

Therefore, the invention of claims 2, 3, 6, 8, 11-14, 19 and 20 is clearly patentable over both Tanaka et al. and JP '355.

The rejection of claims 4, 5, 7 and 15-18 under 35 U.S.C. 103(a) as being unpatentable over JP '355 is respectfully traversed.

The comments set forth above concerning JP '355 are equally applicable to this rejection. Since claims 4, 5, 7 and 15-18 are directly or indirectly dependent on claim 2, the subject matter of these claims is patentable over JP '355 for the same reasons that the subject matter of claim 2 is patentable over this reference.

For these reasons, the subject matter of claims 4, 5, 7 and 15-18 is clearly patentable over JP '355.

Additionally, new claim 21 requires (c)' an alloy layer of copper and tin to form an under layer, and (h)' an alloy layer of tin and copper to form an upper layer.

Although both Tanaka et al. and JP '355 disclose the under layer (c)', neither reference teaches the upper layer (h)' of an alloy layer of tin and copper. Therefore, new claim 21, as well as new dependent claims 22-30, are patentable over both Tanaka et al. and JP '355.

Therefore, in view of the foregoing amendments and remarks, it is submitted that each of the grounds of objection and rejection set forth by the Examiner has been overcome, and that the application is in condition for allowance. Such allowance is solicited.

Respectfully submitted,

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June 27, 2006